

4. (Amended) A multifunctional linker molecule according to claim 1, characterized in that X comprises a structure having a hydrocarbon skeleton with two identical or different substituents that are used for connecting to and/or forming of the molecular groups FUNC_1 and FUNC_2 .

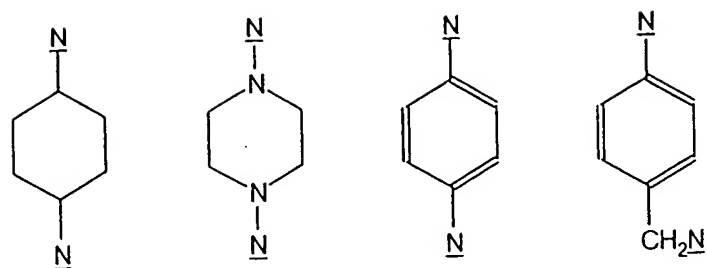
6. (Amended) A multifunctional linker molecule according to claim 4, characterized in that the substituents of X are directed at an angle α relative to one another such that $90^\circ < \alpha < 270^\circ$.

7. (Amended) A multifunctional linker molecule according to claim 4, characterized in that X comprises a conjugated system, an aromatic π -system and/or contains heteroatoms, like N, O or S,

and/or contains at least one electron donating substituent, like CH_3 , O^- , COO^- , $\text{N}(\text{CH}_3)_2$ or NH_2 , and/or electron accepting substituent, like CN , COCH_3 , CONH_2 , CO_2CH_3 , $\text{N}(\text{CH}_3)_3^+$, NO_2 , F , Cl , Br , I , OCF_3 , or SO_2NH_2 .

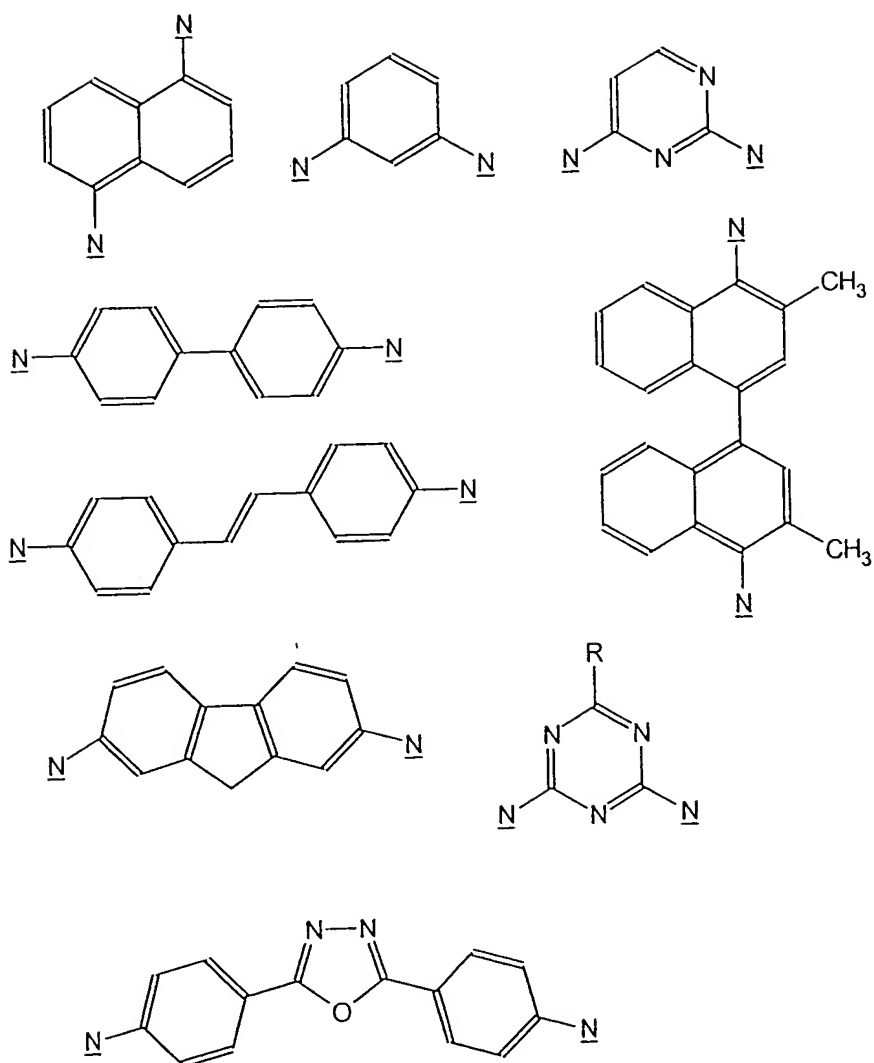
8. (Amended) A multifunctional linker molecule according to claim 4, characterized in that X is selected from the group comprising

- a) linear or branched structures comprising alkanes, alkenes, alkynes and combinations thereof comprising 3-12 carbon atoms and exhibiting at two ends substituents of the group consisting of amines, carboxylic acids, sulfonic acids and phosphonic acids;
- b) structures having the general formula

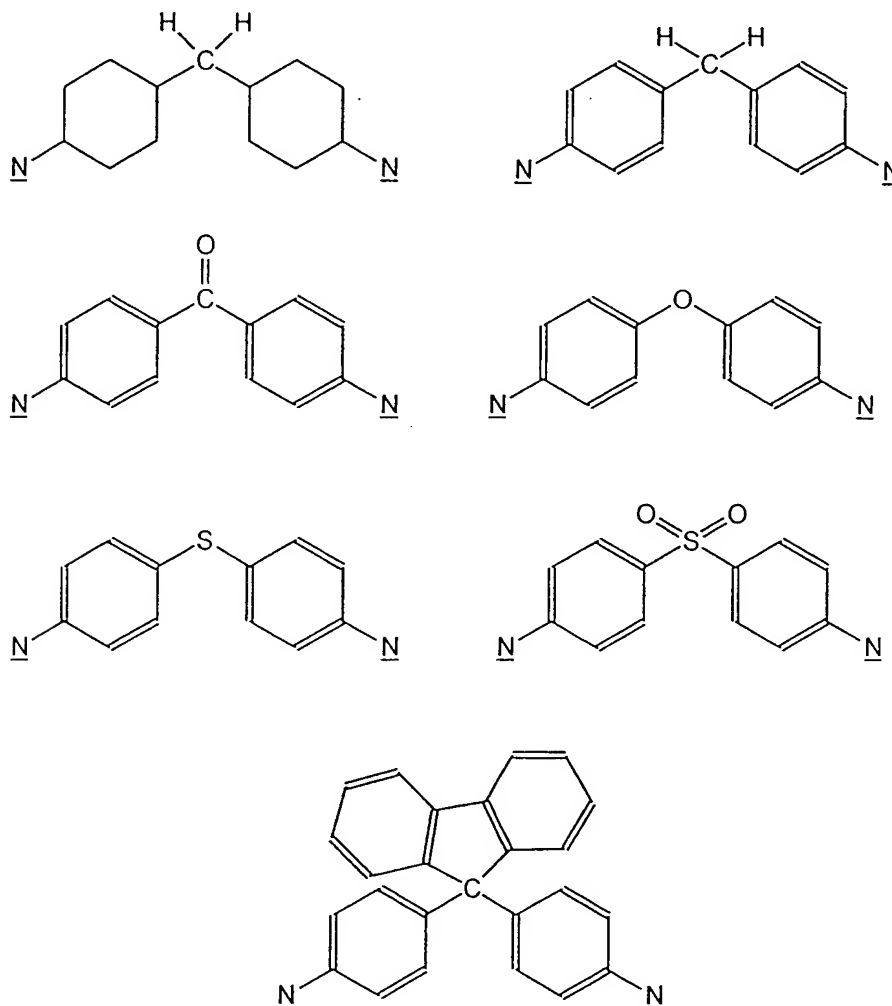


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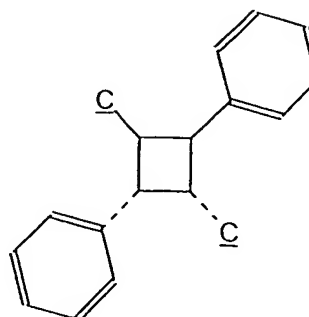
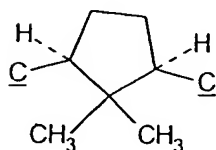
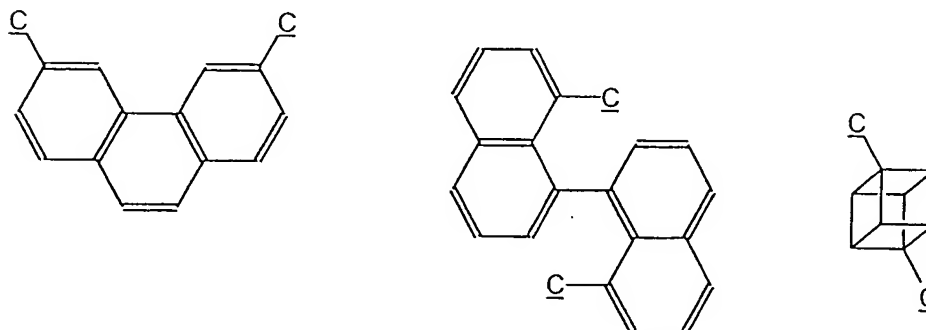
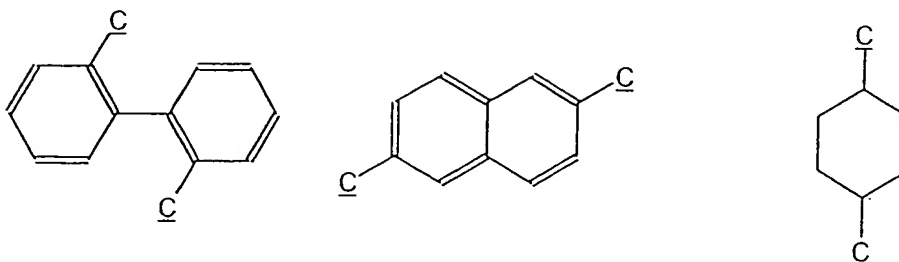
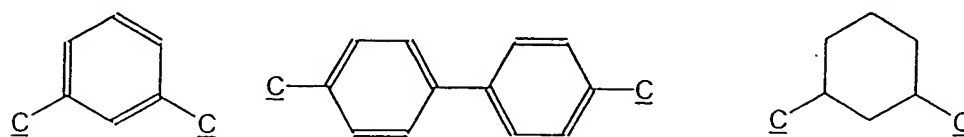
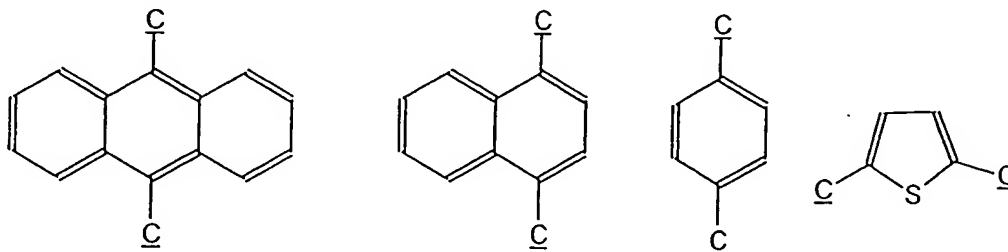
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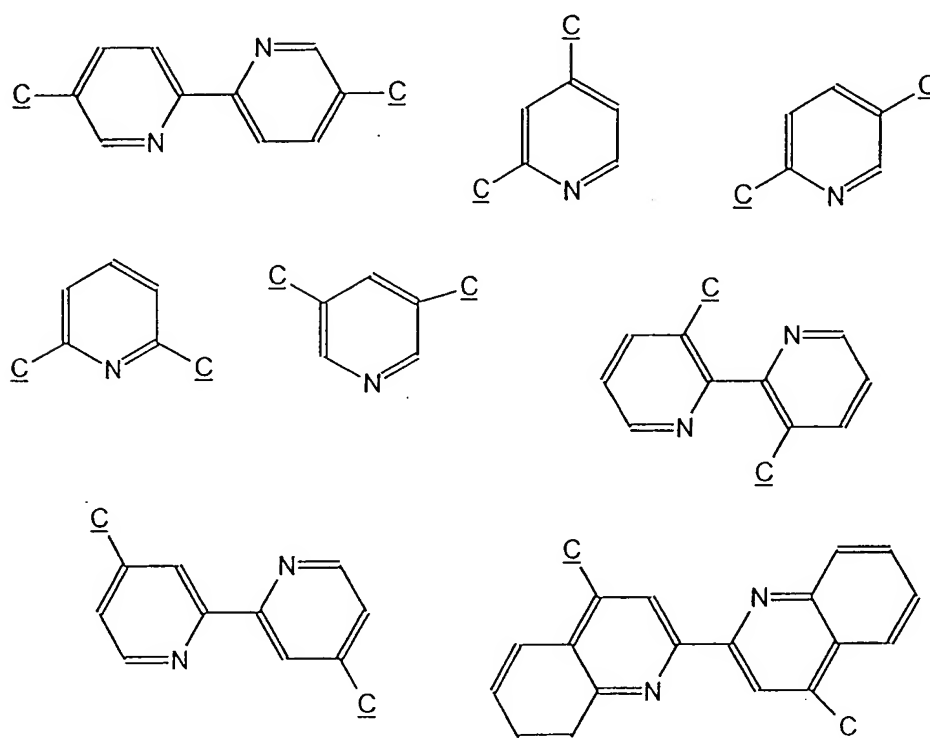
and derivatives thereof containing heteroatoms, like N, S, and/or O, or electron donating or accepting substituents; R can be methyl, phenyl or alkoxyl and wherein FUNC_1 and FUNC_2 are attached via the N-atoms of the two amine substituents indicated by N; structures having the general formula



and derivatives thereof containing electron donating or accepting substituents wherein FUNC₁ and FUNC₂ are attached via the N-atoms of the amine substituents indicated by N; structures having the general formula



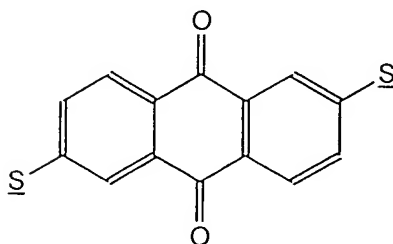
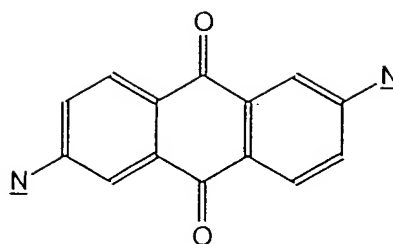
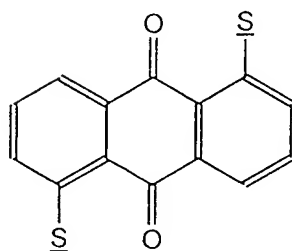
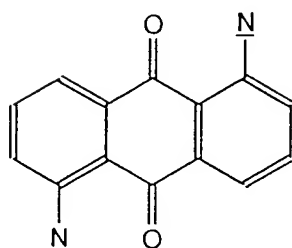
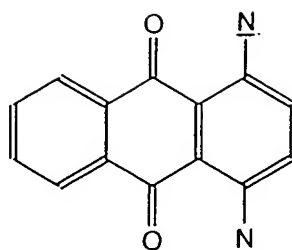
and derivatives thereof containing heteroatoms, like N, S, and/or O, or electron donating or accepting substituents; and wherein FUNC_1 and FUNC_2 are attached via the carbon atoms of the two carboxylic acid substituents indicated by $\underline{\text{C}}$; structures having the general formula



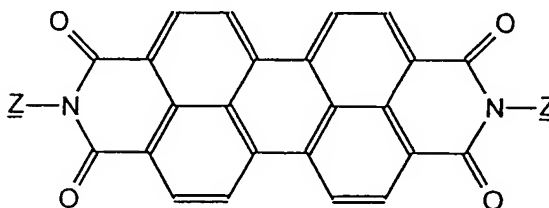
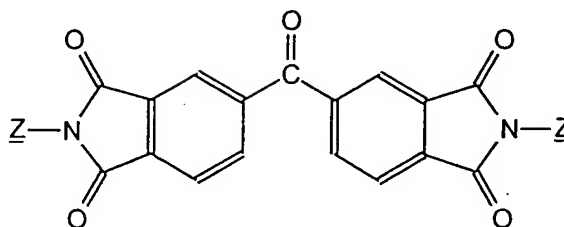
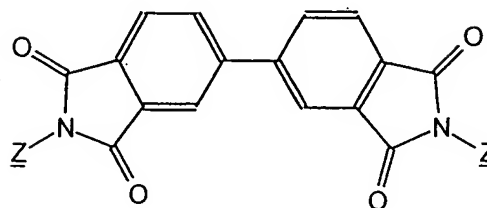
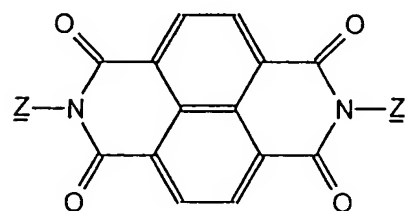
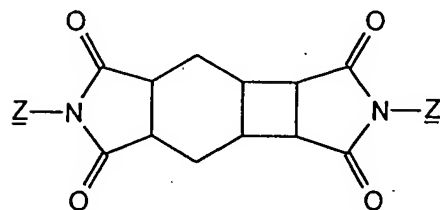
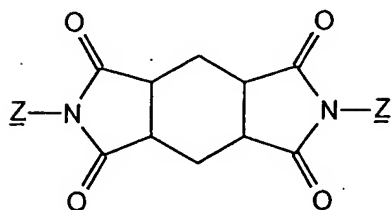
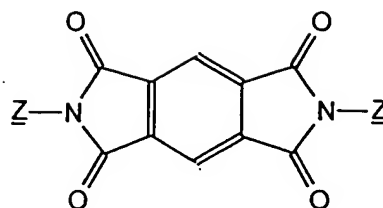
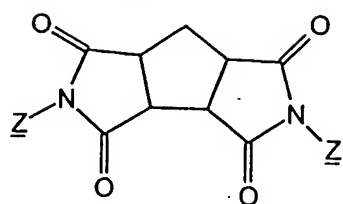
wherein FUNC_1 and FUNC_2 are attached via the carbon atoms of the two carboxylic acid substituents indicated by $\underline{\text{C}}$; structures having the general formula

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and derivatives thereof containing electron donating or accepting substituents wherein FUNC_1 and FUNC_2 are attached via the N- or S-atoms of the two amine or sulfonic acid substituents indicated by N and S; structures having the general formula



in which \underline{Z} represents amine ($\underline{Z}=\underline{N}$) or a carboxymethyl ($\underline{Z}=\underline{CH(R)\underline{C}}$) residue, wherein R is an amino acid side chain and FUNC_1 and FUNC_2 are attached via \underline{Z} ; and

c) electron donors like hydroquinones and electron acceptors, like quinones and diimides carrying to substituents of the group consisting of amines, carboxylic acids, sulfonic acids and phosphonic acids.

9. (Amended) A multifunctional linker molecule according to claim 1, characterized in that FUNC_1 and FUNC_2 independently of each other are connected to X via N, C, S, or P, and are selected from the group comprising

-NH, -NHCO, -NHCONH, -NHCSNH, -NHCONHNH, -NHCSNHNH, -NHCONHNHCO, and -NHCONHNHCO in case of a connection via N;

-CONH, -CONHNH, and -CONHNHCO in case of a connection via C;

-SO₂NH, -SO₂NHNH, and -SO₂NHNHCO in case of a connection via S; and

-PO₂NH, -PO₂NHNH, and -PO₂NHNHCO in case of a connection via P.

10. (Amended) A multifunctional linker molecule according to claim 1, characterized in that CON_1 and CON_2 connected to FUNC_1 and FUNC_2 via NH or CO, independently of each other are selected from the groups comprising

-(CHR)_nCOOH; -(CHR)_nNC; -(CHR)_nNH₂; -(CHR)_nNHCS₂H; -(CHR)_nOPO₃H₂; -

(CHR)_nOSO₃H; -(CHR)_nPO₃H₂; -(CHR)_nSH; -(CHR)_nSO₃H; -CSOH; and -CS₂H in case of a connection via NH; and

-(CHR)_nCOOH; -(CHR)_nNC; -(CHR)_nNH₂; -(CHR)_nNHCS₂H; -(CHR)_nOPO₃H₂; -

(CHR)_nOSO₃H; -(CHR)_nPO₃H₂; -(CHR)_nSH; and -(CHR)_nSO₃H in case of a connection via CO;

and

where R is H, CH₂OH, or CH₃ and n is 1 or 2, and iconic forms thereof.

14. (Amended) 1-, 2-, or 3-dimensional assembly of nanostructured units comprising a multifunctional linker according to claim 1, wherein the conductivity of the assembly is determined by the structure of the multifunctional linker.

16. (Amended) Assembly according to claim 14 in the form of a thin film of interconnected nanostructured units.